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Evaluation of the DISCO-11: Comparison to ADOS, SCQ, and Clinical Classification in Young and Low Functioning Children

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Abstract

BACKGROUND: The Diagnostic Interview for Social and Communication Disorders – version 11 (Wing, 2003) is a standardized, semi-structured and interviewer-based schedule. The DISCO can be used to collect information about developmental history and description of skills and behavior and provides a classification based on different classification systems (e.g. ICD-10/DSM-IV). Inter-rater reliability of the DISCO-10 proved to be high (Leekam et al., 2002; Wing et al. 2002) and classification on ICD-10 algorithm is significantly related to clinical diagnosis (Leekam et al., 2002).

OBJECTIVES:

1) To explore the sensitivity and specificity of DISCO-11 classifications in differentiating children with a clinical ASD classification from children with intellectual disability (non-ASD) and young, typically developing children;
2) To compare DISCO-11 results with Autism Diagnostic Observation Schedule (ADOS) and Social Communication Questionnaire (SCQ) results;
3) To determine the influence of age, non-verbal intelligence and level of language development on DISCO-11 results.

METHODS: The DISCO-11, ADOS (module 1 or 2, revised algorithms) and SCQ were administered from a Dutch sample of 100 children comprising 45 children who had received an independent clinical AD or ASD diagnosis before participation in this study (mainly children with an official AD classification, both with and without intellectual disability; age: 2-12yrs), 20 children with intellectual disability (ID) (non-ASD; age: 5-12yrs) and 35 children with typical development (TD) (age: 2-5yrs). The developmental level of all children ranges from 2 to 6 years.

RESULTS: Preliminary results *(n*=75: 45 ASD, 15 ID, and 15 TD*)* indicate high sensitivity and specificity for DISCO-11 classifications based on ICD-10 algorithms in differentiating ASD from non-ASD conform the clinical classification. The specificity in relation to the ID group was somewhat lower than in relation to the TD group. The agreement between DISCO-11 and ADOS classifications was substantial (K=.83, p<.001). However, the agreement with the SCQ classifications was only moderate (K=.46, p<.001). The correlations between raw total scores of the DISCO algorithm, ADOS algorithm and SCQ are high (ADOS: r=.90, p<.001; SCQ: r=.85, p<.001). The relation between DISCO and ADOS social/communication domain scores is much higher than between the repetitive behavior domain scores, but are both significant (r=.91, p<.001; r=.61, p<.001). Age, non-verbal intelligence and level of language development are not related to total scores of the DISCO algorithm and DISCO classifications (p>.05). Within the ASD group, chronological age has a significantly negative correlation with the DISCO social domain score (r=-.50; p=.001).

CONCLUSIONS: Based on preliminary results the DISCO-11 seems to make an accurate differentiation of AD from non-ASD and is not sensitive to variability in age, non-verbal intelligence and language ability. Although, the interviewers and raters were blind to the previous diagnosis before the DISCO-interview, some parents can have referred to the diagnosis during the conversation. If so, this can have biased the outcomes. The results

support the utility of the DISCO-11 as an effective diagnostic tool for young and low functioning children. However, more research to determine the accurateness for the broader autism spectrum is necessary.